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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,679	12/17/2001	Yong Sung Ham	49128-5032	5096

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EXAMINER

NGUYEN, CHANH DUY

ART UNIT	PAPER NUMBER
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2675

DATE MAILED: 11/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/015,679	HAM, YONG SUNG	
	Examiner	Art Unit	
	Chanh Nguyen	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on August 17, 2005 has been entered and considered by examiner.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 13-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanano (U.S. Patent No. 6,535,194 B1).

As to claim 13, Hanano discloses method of driving a liquid crystal display having a light shutter (2) on a liquid crystal display panel (1b) including a step of supplying video data (i.e. video image from video deck, TV turner, video from computer) to a

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liquid crystal display panel (see column 10, lines 25-28 and column 17, lines 29-33).

Hanano teaches a step of opening the light shutter (i.e. ON period shown in Fig. 4f) at an initial interval applying the video data (i.e., initial interval of even field shown in Fig. 12 which is also a second period tF in synchronizing signal in Fig. 4c) and closing the light shutter in a maintenance interval maintaining the video data to shut off a light from the liquid crystal display panel (i.e. OFF period of shutter signal in Fig. 4f during the even period which also a second period of tF in sync signal) (e.g., see Figure 4f and see column 12, lines 49-68).

As to claim 14, Hanano teaches the shutter control signal (sync signal) a first logical value (i.e. positive value in first tF) in an initial field interval (odd field) when video data are applied to the liquid crystal display panel and has a second logical value (i.e. negative value in second tF) in a time interval (even field) when the video data are maintained at the liquid crystal display panel (see Figs 4c- 4g and Fig.12 and see column 11, lines 39-41 and column 16, lines 1-7).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1, 6-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanano (U.S. Patent No. 6,535,194 B1) in view of Yasuda et al (U.S. Patent No. 4,413,256)

As to claim 1, Hanano discloses a liquid crystal display device (Figure 1) including a liquid crystal display panel (1b) displaying an image (see column 10, lines 25-28). Hanano teaches a light shutter (2) on the liquid crystal display panel (1b) operable to transmit and shut off a light emitted from the liquid crystal display panel (see column 11, line 48-59). Hanano does not mention the one field period is initiated upon transition of a gate signal from a low voltage signal to a high voltage signal. Yasuda teaches a light shutter (Fig. 2) operable to transmit and shut off a light emitted during one field period (i.e., period of T) (see column 2, line 65 through column 3, line 12, column 4, lines 2-40). Yasuda teaches the one field period being initiated upon transition of a gate signal (e.g., Figure 5b-5c) from a low voltage signal (i.e. 0 volt) to a high voltage signal (V2).. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have used high and low voltages of gate signals in one field period as taught by Yasuda to the driving circuit of Hanano so as to avoid deterioration in image quality on the liquid crystal panel (see column 1, lines 23-28 of Yasuda).

As to claim 7, this claim differs from claim 1 only in that the limitations "a controller and " a light shutter driver" are additionally recited. Hanano clearly teaches a controller (e.g., 11) generating a shutter control signal (e.g., sync signal) to open and

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close the light shutter (2); and a light shutter driver (35) responding to the shutter control signal (sync signal) to drive the light shutter (2) (see column 10, lines 36-38).

As to claim 6, Hanano teaches a backlight (1a) irradiating a light toward the liquid crystal display panel (1b).

As to claim 8, Hanano teaches the shutter control signal (i.e. sync signal) having an inverse polarity (see figure (4c and 4d) after video data having an inverse polarity are applied to the liquid crystal display panel (see column 16, lines 1-7)

As to claim 9, Hanano teaches the shutter control signal being a pulse signal (sync signal) having a first logical value turning on the light shutter and a second logical value turning off the light shutter (see column 11, lines 39-41).

As to claim 12, Hanano teaches the shutter control signal (sync signal) a first logical value in an initial field interval when video data are applied to the liquid crystal display panel and has a second logical value in a time interval when the video data are maintained at the liquid crystal display panel (see column 11, lines 39-41 and column 16, lines 1-7).

6. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanano in view of Yasuda, as applied to claim 1 and further in view of Matsumoto (U.S. Patent No. 4,097,128).

As to claim 4, note the discussion of Hanano and Yasuda above, Hanano and Yasuda do not mention the liquid crystal display panel and the light shutter being bonded with each other and have a polarizer therebetween. Matsumoto teaches the liquid crystal display panel (e.g., 10) and the light shutter (16) being bonded with each other

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and have a polarizer (22 and 24) therebetween (see Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have used polarizers between liquid crystal and shutter as taught by Matsumoto to the display devices of Hanano as modified by Yasuda so as to display a large number of colors including those having prominent brightness and those having an intermediate degree of brightness (see column 7, lines 10-28 of Matsumoto).

As to claim 2, Matsumoto clearly teaches the light shutter (e.g., 16) includes, a liquid crystal (18) between two glass substrates (17 and 19), and a plurality of electrodes on the two glass substrates to drive the liquid crystal (see column 10, lines 11-12).

As to claim 3, Matsumoto teaches the light shutter (16) have a polarizer (e.g., 23) to transmit a linearly polarized light (see column 10, lines 44-47).

As to claim 5, Matsumoto teaches the liquid crystal display panel (10) and the light shutter (16) being bonded to a single glass substrate (glass substrate 13) (see column 9, lines 50-52) .

7. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanano in view of Yasuda, as applied to claim 7 and further in view of Yamamoto et al (U.S. Patent No. 4,926,168).

As to claims 10-11, note the discussion of Hanano and Yasuda above, Hanano and Yasuda do not mention a data driver, gate driver as recited in claim 10 as well as

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dot clock and start pulse as recited in claim 11. Yamamoto teaches a data driver (6) connected to a plurality of data lines(Y1-Y640) of the liquid crystal display panel (4) to apply video data to the data lines, and a gate driver (5) connected to a plurality of gate lines (X1-X200) of the liquid crystal display panel (4) to apply a scanning signal to the gate lines. Yamamoto also teaches data driver (6) connected to the controller (7) that generates the video data (DATA) and a dot clock (CP)and controls the data driver (6) , and the gate driver (5) connected to the controller (7) that generates a gate start pulse (STP) allowing the scanning signal to be sequentially generated and controls the gate driver (5); see Figure 1 and see column 4,lines 6-52. Therefore, it would have been obvious to one of ordinary skill in the art at the invention was made to have used the data driver and gate driver of Yamamoto to the display device of Hanano as modified by Yasuda because the display drivers of Yamamoto provides a uniform and high quality display free from cross-talk, display irregularity and meandering phenomenon (see column 3, lines 6-10 of Yamamoto).

Response to Arguments

8. Applicant's arguments with respect to claims 1-14 have been considered but are moot in view of the new ground(s) of rejection.

In view of amendment, claims 1, 6-9 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanano in view of Yasuda et al.

On page 6, second paragraph, applicant argues that Yasuda is completely silent with regard to operational characteristics of a light shutter with respect to transitioning of gate signals. However, Yasuda teaches that the light is transmitted or not depending on

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the voltages applied to the row electrodes (or gate signals) with the voltages applied to column electrodes (see column 3, lines 13-25 and column 1, lines 1-21). For example, if the gate signal is applied a voltage V2 and column signal is applied a voltage V1, then the light is transmitted so that the pixel is designated as ON. Otherwise, if the gate signal is applied 0 volt, then the light is blocked (i.e., pixel is turned OFF) (see (Figures 5-6). Applicant also argues that "Hanano teaches that control signals for turning ON and OFF of a light shutter 2 are delayed with respect to image signal". However, the claims do not require that the control signal in the claimed invention for turning ON or OFF a light shutter are not delayed.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Inquiries

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chanh Nguyen whose telephone number is (571) 272-7772. The examiner can normally be reached on Monday- Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CN

C. Nguyen
October 27, 2005

Chanh Nguyen
Chanh Nguyen
Primary Examiner
Art Unit 2675